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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,716

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James Edward Delves

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02/24/2011

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EXAMINER

VANDEUSEN, CHRISTOPHER

ART UNIT

PAPER NUMBER

1774

MAIL DATE

DELIVERY MODE

02/24/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,716	Applicant(s) DELVES ET AL.	
	Examiner Christopher K. VanDeusen	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 13-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/14/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I in the reply filed on 27 August 2010 is acknowledged.
2. Claims 13-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 27 August 2010.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Johannes, US Patent 4053142 (already of record).

Regarding claims 1 and 2, Johannes '142 teaches an apparatus for enhancing solubility of a solute in a solvent (abstract; col. 1, line 64 – col. 2, line 13), the apparatus comprising a solvent and/or solute inlet (18 of figure 1; col. 2, lines 54-68) having a

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fluidizing unit which creates one vortex of rotating flow in the solute and/or solvent (16 of figure 1; col. 2, lines 1-4 and 41-46 teach a rotational flow of the first fluid) between the fluidizing unit and a discharge pipe (in mixing chamber 10 of figures 1-2; col. 2, lines 41-46), as in claim 1; and

in which a fluid interfacial or boundary layer exists within the vortex where enhanced mass transfer, or dissolution of solute into the solvent takes place (abstract; col. 1, line 64 – col. 2, line 13 teach that this is a feature of the invention when the second component is added), as in claim 2.

6. Claims 3 and 5-10 do not further limit the structure of the apparatus, but rather recite contents of the apparatus during use. "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." See MPEP § 2115. As such, these limitations need not be addressed by the prior art, and the prior art cited in the rejection of claim 1 above is considered to reject claims 3 and 5-10.

7. Claim 4 at lines 1-2 recites that "means are provided to achieve at least two different stages of leaching". The Applicant's specification supports and illustrates in Figure 5 the means comprising several fluidizing units in succession for how the (see Applicant's specification; pg 16, lines 12-21). Accordingly, this means-plus-function language invokes a 35 U.S.C. 112, sixth paragraph limitation (see MPEP § 2181).

The limitation in line 2 of claim 4 that the means achieve "leaching" is based on the limitation in claim 3 that the apparatus be used for leaching. As noted above, this constitutes an intended use of the apparatus and needs not be addressed by the prior

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art. As such, the structural limitation recited in claim 4 need only be addressed by the prior art to the extent that the prior art provides a structure capable of such use.

The limitation in lines 2-3 of claim 4 that the means be "targeted at different solutes to be dissolved in different solvents" does not further limit the structure of the apparatus, but rather recites contents of the apparatus during use. "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." See MPEP § 2115. As such, this limitation needs not be addressed by the prior art.

Regarding claim 4, Johannes '142 teaches an apparatus of claim 1, as applied above. Johannes '142 further teaches an apparatus further comprising means are provided to achieve at least two stages of fluidization (col. 3, lines 1-9).

8. Regarding claim 11, Johannes '142 teaches an apparatus of claim 1, as applied above.

Johannes '142 further teaches an apparatus in which the fluidizing unit operates on a continuous flow of solvent or solute (abstract teaches that components are "continuously discharged").

9. Regarding claim 12, Johannes '142 teaches an apparatus of claim 1, as applied above.

Johannes '142 further teaches an apparatus further comprising a flow chamber having a fluid inlet (18 of figure 2; col. 2, lines 54-68) and a fluid outlet (26 of figure 2; col. 2, lines 54-68) and at least one tangential slot (12 of figure 2; col. 2, lines 54-68).

Response to Arguments

10. Applicants' arguments filed 12/14/2010 have been fully considered but they are not persuasive.

Applicants argue that Johannes '801 does not teach a vortex because it does not use the word "vortex" in the description of the invention. While the examiner agrees that Johannes '801 uses different terminology, it explicitly teaches a device "causing the first fluid to enter said mixing chamber and to assume a generally rotational fluid flow pattern" (col. 2, lines 1-4). The Merriam-Webster English Dictionary defines a vortex as "a region within a body of fluid in which the fluid elements have an angular velocity". Johannes '801 clearly and explicitly teaches such a "vortex" as cited above. As such, the examiner maintains that Johannes '801 teaches a vortex within the normal interpretation of the term.

11. Applicants further argue that Johannes '801 does not teach the claimed limitations because it teaches two opposing fluid flows. The examiner agrees that this is, in fact the teaching of Johannes '801. However, applicant's invention as instantly claimed requires only that the solvent or solute form a vortex (see claim 1). Johannes '801 clearly and explicitly teaches an apparatus in which a vortex is formed in one of the fluids (the first fluid, as cited in the rejection above). Applicants' arguments that Johannes '801 teaches two vortices are, as such, irrelevant to the claimed invention, as the one vortex in the solvent *and/or* solute as taught by Johannes '801, as cited above, is sufficient to reject the claims as instantly amended.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher K. VanDeusen whose telephone number is (571) 270-5020. The examiner can normally be reached on Monday - Friday, 8:30 AM - 6 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CKV/

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1774